CLAIMS

1. A power tool comprising:

a battery,

a solenoid coil storing the electrical energy supplied from the battery as magnetic energy,

a switch electrically connecting and disconnecting the battery with the solenoid coil,

a plunger being attracted by electromagnetic force stored in the solenoid coil and moving from a first position to a second position,

means for retaining the plunger in the first position, and

a controller coupled to the switch and the retaining means, the controller (1) turning on the switch when the plunger is retained by the retaining means in the first position, and (2) turning off the retaining means in order to stop retaining the plunger when the current flowing through the solenoid coil reaches a predetermined value.

2. A power tool as in Claim 1, wherein the controller maintains the switch in an ON state during a first predetermined period even after having turned off the retaining means.

3. A power tool as in Claim 1, wherein the controller simultaneously turns the switch OFF and turning off the retaining means to stop retaining the plunger.

4. A power tool as in Claim 1, wherein the controller, after having turned on the switch, turns off the switch after a second predetermined period has elapsed even in the case where the current value did not reach the predetermined value.

5. A power tool as in Claim 4, wherein the predetermined value varies in accordance with the battery voltage.

6. A power tool comprising:

a plunger,

a solenoid coil for driving the plunger from a first position to a second position,

a switch turning ON and OFF a current from a power source to the solenoid coil,

means for retaining the plunger in the first position, and

a controller coupled to the switch and the retaining means, the controller (1) turning on the switch in order to supply current from the power source to the solenoid coil when the plunger is retained by the retaining means in the first position, and (2) turning off the retaining means in order to stop retaining the plunger when the current flowing through the solenoid coil reaches a predetermined value, whereby the plunger is being attracted by the electromagnetic energy stored in the solenoid coil, and moves from the first position to the second position.

7. A power tool as in Claim 6, wherein the controller maintains the switch in an ON state during a first predetermined period even after having turned off the retaining means.

8. A power tool as in Claim 6, wherein the controller simultaneously turns the switch OFF and turning off the retaining means to stop retaining the plunger.

9. A power tool as in claim 6, wherein the power source comprises an external power source.

10. A power tool as in claim 6, wherein the power source comprises rechargeable battery cells.

11. A power tool as in Claim 10, wherein the controller, after having turned on the switch, turns off the switch after a second predetermined period has elapsed even in the case where the current value did not reach the predetermined value.

12. A power tool as in Claim 11, wherein the predetermined value varies in accordance with the battery voltage.